

### **3.3.4.10 Inland Beach**

#### **3.3.4.10.1 Community Overview**

The beaches of inland lakes that experience enough water level fluctuation to prevent the development of a stable shoreline forest or other communities may instead support a specialized biota adapted to sandy or gravelly littoral habitats. The shorelines of such lakes (usually seepage lakes) may be subject to fluctuations of as much as several meters over a few years or decades.

Seepage lakes have neither a significant inlet nor outlet, and are fed by precipitation and groundwater. These lakes often have long residence times, and lake levels fluctuate with local groundwater levels and precipitation cycles. Seepage lakes lose water through evaporation and groundwater moving on a downslope gradient. The alternation of high and low periods maintains populations of the beach specialists over time, including some rare species of unusual geographic affinity, such as the Atlantic Coastal Plain of the eastern United States. A number of lakes in the Northwest Sands, Central Sand Hills, and Northern Highland Ecological Landscapes experience the lake level fluctuations necessary to support this community.

#### **3.3.4.10.2 Vertebrate Species of Greatest Conservation Need Associated with Inland Beach**

There were not any vertebrate Species of Greatest Conservation Need that were identified as moderately or significantly associated with inland beaches.

#### **3.3.4.10.3 Threats and Priority Conservation Actions for Inland Beach**

##### **3.3.4.10.3.1 Statewide Overview of Threats and Priority Conservation Actions for Inland Beach**

The following list of threats and priority conservation actions were identified for inland beach in Wisconsin. The threats and priority conservation actions described below apply to all of the Ecological Landscapes in Section 3.3.4.10.3.2 unless otherwise indicated.

##### Threats and Issues

- Seepage lakes with hard bottom materials, upland shorelines, and little groundwater inflow tend to be susceptible to the effects of acid rain, which could affect some of the beach plants that spend part of their life cycles in the water.
- Groundwater quality and the use of land on the shoreline can both affect water quality. Therefore, long residence times can mean that pollutants introduced into the system can remain for long periods.
- Lake level stabilization measures can reduce or cause the loss of this community.
- Shoreline development and other drivers of both heavy shoreline usage and hydrologic disruption can damage plant community structure and alter runoff characteristics.
- Physical damage (trampling, rutting, compaction) to the plant community can occur due to use by livestock and vehicles, and from heavy foot travel.
- Road construction and quarrying may alter the hydrology of the lakeshed, resulting in loss of the water level fluctuations necessary to maintain this community.
- The impacts of invasive species have not been well studied for this community type, but warrant investigation in regard to impacts on rare plant and invertebrate species.

##### Priority Conservation Actions

- Undeveloped examples of inland beach communities are limited in extent and should be the target of future inventory efforts in appropriate landscapes.

- This type is now found mostly on smaller lakes with little development, and on a few large lakes that have been held by a small number of owners.
- Some of the associated plant species are globally rare.
- Public property management plans should recognize the fragility of this type and the highly specialized nature of some of the organisms that are dependent on them.
- Additional protection is needed across the range of this type in Wisconsin.
- Preservation of the natural hydrologic regime requires managing land areas in the lakeshed to maintain water infiltration, overland inflow, and the natural cycle of water level changes.
- Prevent groundwater contamination.
- Continue air quality management programs that have led to a reduction in the precursors of atmospheric acid deposition.

### **3.3.4.10.3.2 Additional Considerations for Inland Beach by Ecological Landscape**

Special considerations have been identified for those Ecological Landscapes where major or important opportunities for protection, restoration, and/or management of inland beach exist. Those considerations are described below and are in addition to the statewide threats and priority conservation actions for inland beach found in Section 3.3.4.10.3.1.

#### Additional Considerations for Inland Beach in Ecological Landscapes with **Major** Opportunities for Protection, Restoration, and/or Management

##### *Northwest Sands*

Lakes in the Northwest Sands continue to face increasingly heavy development pressure for year-round and seasonal homes, especially from the Twin Cities metropolitan area. Rush Lake (Douglas County), Richart Lake (Burnett County), Cloverleaf Lake (Washburn County), Deer Print Lake (Douglas County), and Goose Lake Beach (Douglas County) harbor good examples of this type. Lake associations led by lake protection advocates may be able to play a key role in limiting incompatible land uses.

#### Additional Considerations for Inland Beach in Ecological Landscapes with **Important** Opportunities for Protection, Restoration, and/or Management

##### *Central Sand Hills*

The majority of lakes in this Ecological Landscape have been heavily developed. East Lake (Portage County), Scout Lake (Columbia County), as well as Chain Lake and Silver Lake (both Waushara County) contain good examples of inland beach. A number of rare plant species have been documented in the beach communities in this Ecological Landscape.

##### *North Central Forest*

This Ecological Landscape is also very popular for recreational and retirement lakeshore home development. Kentuck Lake Swale (Vilas County) and Mountain Lake (Bayfield County) on the Chequamegon-Nicolet National Forest hold examples of this community type.

##### *Northeast Sands*

A few additional occurrences of this community are known from lakeshores in the Northeast Sands Ecological Landscape, but additional information is needed to assess them adequately.

*Northern Highland*

Lake development ranges from moderate to very intensive on most lakes in this Ecological Landscape that can be reached by road. A number of lakes enjoy advocacy from lake association members and leaders. This community occurs at a number of lakes within the Northern Highland-American Legion State Forest, including Salsich Lake, Bittersweet Lakes State Natural Area, and on the east side of Trout Lake (all Vilas County).